

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

J1046 U.S. PTO  
10/071702  
02/08/02

In re Application of:	§	Customer No. 27,405
William R. Patterson et al.	§	
	§	Parent Application
Parent Application Serial No.: 09/409,952	§	Group Art Unit: 3762
Parent Application Filed: September 30, 1999	§	
	§	Parent Application
Serial No.: Unassigned	§	Examiner: Bianco, Patricia
	§	
Filed: Herewith	§	
	§	
For: APPARATUS FOR BLOOD	§	Atty. Docket: PA084-US
OXYGENATION (as amended)	§	

ASSISTANT COMMISSIONER  
FOR PATENTS  
WASHINGTON, D.C. 20231

EXPRESS MAIL MAILING LABEL	
NUMBER:	EL 842829991 US
DATE OF DEPOSIT:	February 8, 2002
<i>Pursuant to 37 C.F.R. § 1.10, I hereby certify that I am personally depositing this paper or fee with the U.S. Postal Service, "Express Mail Post Office to Addressee" service on the date indicated above in a sealed envelope (a) having the above-numbered Express Mail label and sufficient postage affixed, and (b) addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.</i>	
February 8, 2002	<i>Tamara J. McGovern</i>
Date	Tamara J. McGovern

Sirs:

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT

In accordance with 37 C.F.R. §§ 1.56 and 1.97, enclosed please find a copy of Form PTO-1449 listing references which might be deemed material to the examination of the above -identified application.

In accordance with 37 C.F.R. §1.97, this Information Disclosure Statement is not to be construed as a representation that a search has been made, as an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b), or as a representation that no other possibly material information, as defined in 37 C.F.R. §1.56(b), exists.

1. ☒ The information disclosure statement submitted herewith is being filed:
  - (1) within three months of the filing date of a national application or

- (2) within three months of the date of entry of the national stage in an international application or
- (3) before the mailing date of a first Office Action on the merits or
- (4) before the mailing date of a first Office Action after the filing of a request for continued examination under §1.114, whichever event occurs last. 37 C.F.R. §1.97(b).

2. ☐ The information disclosure statement transmitted herewith is being filed *after* three months of the filing date of a national application or date of entry of the national stage as set forth in §1.491 in an international application or after the mailing date of the first Office Action on the merits or after the mailing date of the first Office Action after the filing of a request for continued examination under §1.114, whichever event occurred last but *before* the mailing date of either:

- (1) a final action under §1.113 or
  - (2) a notice of allowance under §1.311, whichever occurs first.
- 37 C.F.R. §1.97(c).

#### CERTIFICATION OR FEE

A. Included with this transmittal is

- i. ☐ a certification (set forth below) in accordance with 37 C.F.R. §1.97(e). (If for any reason the certification set forth below should be unsatisfactory, the Commissioner is provisionally authorized to charge the \$180 fee (37 C.F.R. §1.17(p)) to Deposit Account No. 501769. A duplicate copy of this sheet is enclosed.)

OR

- ii. ☐ the attached fee set forth in 37 C.F.R. §1.17(p) for submission of an information disclosure statement under §1.97(c). (\$180.00).

3. ☐ The information disclosure statement transmitted herewith is being filed *after* a

final action under §1.113 or a notice of allowance under §1.311, whichever occurs first, but before, or simultaneously with the payment of the issue fee. 37 C.F.R. §1.97(d).

### CERTIFICATION, PETITION AND FEE

- A. In accordance with the requirements of 37 C.F.R. §1.97(d):
- i. Set forth below is a certification as specified in 37 C.F.R. §1.97(e).
  - ii. Applicant hereby petitions for the consideration of the accompanying information disclosure statement. 37 C.F.R. §1.97(d)(2).
  - iii. Applicant submits the petition fee set forth in §1.17(i). (\$130.00).

### CERTIFICATION

(Required if 2Ai or 3 above is marked)

4. I, the person signing below, certify
- ☐ that each item of information contained in the information disclosure statement was cited in the attached communication from a foreign patent office in a counterpart foreign application and that the communication is dated not more than three months prior to the filing of the statement. 37 C.F.R. §1.97(e)(1).

OR

- ☐ that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of the statement. 37 C.F.R. §1.97(e)(2).

5. ☒ A copy of any patent, publication or other information listed in the attached PTO-1449 is not being provided if it was previously cited by or submitted to the Office in a prior application, upon which this application relies for an earlier filing date under 35 U.S.C. 120. 37 C.F.R. §1.98(d).

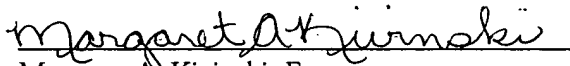
Prior application serial no(s). : 09/409,952

Filing date: September 30, 1999

6. ☒ If a fee is due, a fee transmittal is provided herewith. Further, if it should be determined that for any reason either an insufficient fee or an excessive has been paid, please charge any insufficiency or credit any overpayment necessary to ensure consideration of the information disclosure statement for the above-identified application to Deposit Account No. 501769.

Respectfully submitted,

Date: February 8, 2002

  
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Form PTO-1449 (modified)  List of Patents and Publications For Applicant's Information Disclosure Statement  (Use several sheets if necessary)	ATTY. DOCKET NO. PA084-US	SERIAL NO. Unassigned
	APPLICANT Patterson et al.	
	FILING DATE Herewith	GROUP Unassigned

1046 U.S. PRO  
 10/071702  
 02/08/02

**U.S. PATENT DOCUMENTS**

EXAM. INIT.	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
		2,474,665	06/28/49	Guarino	128	214	02/26/46
		3,142,296	07/28/64	Love	128	214	05/31/62
		3,437,450	04/08/69	Greenwood	23	285.5	01/04/65
		3,512,517	05/19/70	Kadish et al.	128	2	11/30/64
		4,041,180	08/09/77	Wilson	426	11	03/05/76
		4,239,729	12/16/80	Hasegawa et al.	422	48	
		4,297,318	10/24/86	Raible	422	46	
		4,317,731	03/02/82	Roberts, Jr. et al.	210	741	03/27/78
		4,442,843	04/17/84	Rasor et al.	128	660	11/17/81
		4,466,804	08/21/84	Hino	604	4	09/24/81
		4,493,692	01/15/85	Reed	604	4	09/29/82
		4,596,210	06/24/86	Schmidtke	123	1 A	08/31/83
		4,657,756	04/14/87	Rasor et al.	424	9	09/08/83
		4,664,680	05/12/87	Weber	55	48	04/07/86
		4,681,119	07/21/87	Rasor et al.	128	660	04/22/86
		4,735,750	04/05/88	Damann	261	29	
		4,769,241	09/06/88	Heldebrant et al.	424	161	09/23/86
		4,804,358	02/14/89	Karcher et al.	600	17	
		4,828,543	05/09/89	Weiss et al.	604	4	04/03/86
		4,871,450	10/03/89	Goodrich et al.	210	151	08/20/87
		4,874,509	10/17/89	Bullock	210	169	04/24/87
		4,917,667	04/17/90	Jackson	604	96	
		4,919,895	04/24/90	Heldebrant et al.	422	129	06/18/87
		4,973,558	11/27/90	Wilson et al.	435	240.242	04/28/88

EXAM. INIT.	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
		5,006,352	04/09/91	Zelenák née Zoltai et al.	426	67	02/26/88
		5,084,011	01/28/92	Grady	604	24	01/25/90
		5,086,620	02/11/92	Spears	62	51.1	02/14/91
		5,261,875	11/16/93	Spears	604	24	01/08/92
		5,322,500	06/21/94	Johnson et al.	604	4	03/04/93
		5,380,307	01/10/95	Chee et al.	604	264	
		5,382,407	01/17/95	Leonard	42	48	
		5,407,426	04/18/95	Spears	4	24	11/15/93
		5,569,180	10/29/96	Spears	604	24	07/12/94
		5,573,505	11/12/96	Johnson et al.	604	56	
		5,599,296	02/04/97	Spears	604	26	12/09/94
		5,693,017	12/02/97	Spears et al.	604	132	06/07/95
		5,695,717	12/09/97	Polaschegg et al.	422	48	11/15/96
		5,709,654	01/20/98	Klatz et al.	604	24	06/07/95
		5,725,492	03/10/98	Igo et al.	604	4	03/04/96
		5,730,330	03/24/98	Reading	222	113	07/31/95
		5,730,698	03/24/98	Fischell et al.	600	3	05/09/95
		5,730,935	03/24/98	Spears	422	44	06/07/95
		5,735,934	04/07/98	Spears	75	414	05/30/95
		5,752,929	05/19/98	Klatz et al.	604	51	06/07/95
		5,766,490	06/16/98	Taylor et al.	210	758	01/24/96
		5,797,874	08/25/98	Spears	604	53	06/05/95
		5,797,876	08/25/98	Spears et al.	604	95	11/27/95
		5,814,222	09/29/98	Zelenák et al.	210	615	03/31/95
		5,834,519	11/10/98	Spears	514	938	10/11/96
		5,843,307	12/01/98	Faivre et al.	210	192	01/26/95
		5,849,191	12/15/98	Agranonik et al.	210	608	11/22/95
		5,874,093	02/23/99	Eliaz et al.	424	401	11/15/96
		5,879,282	03/09/99	Fischell et al.	600	3	01/21/97
		5,885,467	03/23/99	Zelenák et al.	210	758	11/24/97
		5,888,611	03/30/99	Leonard	428	113	
		5,893,838	04/13/99	Daoud et al.	604	26	08/15/97
		5,922,305	07/13/99	Spears	424	43	07/08/97

EXAM. INIT.	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
		5,957,899	09/28/99	Spears et al.	604	264	06/24/96
		5,958,377	09/28/99	Spears	424	43	07/08/97
		5,976,119	11/02/99	Spears et al.	604	508	08/21/98
		6,030,357	02/29/00	Daoud et al.	604	26	
		6,123,698	09/26/00	Spears et al.	604	523	
		6,142,971	11/07/00	Daoud et al.	604	23	
		6,169,117	01/02/01	Spears	514	37	
		6,180,059	01/30/01	Divino, Jr. et al.	422	45	
		6,197,279	03/06/01	Spears	424	43	
		6,235,007	05/22/01	Divino, Jr. et al.	604	264	
		6,238,645	05/29/01	Spears	424	43	

*AA/PA*

#### FOREIGN PATENT DOCUMENTS

EXAM. INIT.	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION
		GB 1,506,555	04/05/78	Great Britain	A61M	1/03	English
		WO 92/14404	09/03/92	PCT	A61B	6/00	Yes
		WO 92/14976	09/03/92	PCT	F25B	19/00	Yes
		WO 95/13843	05/26/95	PCT	A61M	37/00	Yes
		WO 96/01593	01/25/96	PCT	A61B	19/00	Yes
		WO 96/17565	06/13/96	PCT	A61F	5/00	Yes
		WO 96/40334	12/19/96	PCT	A61M	15/00	Yes
		WO 96/41987	12/27/96	PCT	F17C		Yes
		WO 97/19713	06/05/97	PCT	A61M		Yes
		WO 97/49447	12/31/97	PCT	A61M	25/00	Yes
		WO 98/16203	04/23/98	PCT	A61K	9/133	Yes
		WO 98/46340	10/22/98	PCT	B01F		Yes
		WO 99/08732	02/25/99	PCT	A61M	1/32	Yes
		WO 99/08733	02/25/99	PCT	A61M	1/36	Yes

# OTHER ART

(Author, Title, Journal, Volume, Pertinent Pages, & Date)		
		US Appl. No. 08/581,019 filed 01/03/1996, Spears, "Stabilized Gas-Enriched and Gas-Supersaturated Liquids"
		US Appl. No. 08/915,532 filed 08/15/1997, Spears et al., "Method for Generalized Extracorporeal Support"
		US Appl. No. 09/122,438 filed 07/24/1998, Divino, Jr. et al., "Apparatus for the Preparation and Delivery of Gas-Supersaturated Fluids"
		US Appl. No. 09/312,181 filed 05/14/1999, Buhr et al., "Apparatus and Method for High Pressure Fluid Filtration"
		Padmavathy Guttikonda et al., "Effect of Topical O <sub>2</sub> -Supersaturated Normal Saline on UV Light-Induced Mouse Ear Inflammation," SSID Dermatology Session Abstract, Vol. 44, No. 1, p. 51A, January 1996.
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		S. C. Davis et al., "Delivery of Oxygen to Cutaneous Tissue Via a Super Saturated Oxygen (SOS) Emulsion," Journal of Investigative Dermatology, Vol. 112, No. 4, pg. 632, April 1999.
		N.M. Yusof et al., "Assessment of the Safety and Efficacy of Supersaturated Oxygen Solution: A Novel Method of Reducing Myocardial Ischaemia in PTCA," (Abstracts/Poster TCT-276), Amer. J. Cardiology, p. 100S, October 8, 1998.
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		Frank B. Kenrick et al., "Supersaturation of Gases in Liquids," J. Phys. Chem., Vol. 28, pgs. 1308-1315, 1924.
		Robert B. Dean, "The Formation of Bubbles," Journal of Applied Physics, Volume 15, pgs. 446-451, May, 1944.
		C. Boe et al., "Use of Hyperbaric Oxygen as Oxygen Source in Extracorporeal Oxygenation of Blood," Physiological and Clinical Aspects of Oxygenator Design, Elsevier North-Holland Biomedical Press, Luxembourg, 1976.
		Pieter Stroev et al., "Supersaturated fluorocarbon as an oxygen source," Physiological and Clinical Aspects of Oxygenator Design, Elsevier North-Holland Biomedical Press, pgs. 129-139, Luxembourg, 1976.
		Edvard A. Hemmingsen, "Cavitation in gas-supersaturated solutions," Journal of Applied Physics, Vol. 46, No. 1, pgs. 213-218, January 1976.
		Wayne A. Gerth et al., "Gas Supersaturation Thresholds for Spontaneous Cavitation in Water with Gas Equilibration Pressures up to 570 atm1," Z. Naturforsch, 31a, pgs.1711-1716, October 5, 1976.
		Edvard A. Hemmingsen, "Effects of Surfactants and Electrolytes on the Nucleation of Bubbles in Gas-Supersaturated Solutions," Z. Naturforsch, 33a, pgs. 164-171, October 25, 1977.
		Yehuda Finkelstein et al., "Formation of Gas Bubbles in Supersaturated Solutions of Gases in Water," AIChE Journal, Vol. 13, No. 9, pgs. 1409-1419, September, 1985.
		Mordecai B. Rubin et al., "Measurements of Critical Supersaturation for Homogeneous Nucleation of Bubbles," American Chemical Society, December 9, 1986.
		"Fluosol® 20% Intravascular Perfluorochemical Emulsion Product Information," Alpha Therapeutic Corporation, Los Angeles, California, pgs. 1-8, December 1989.
		J. Richard Spears et al., "Potential Intravascular Oxygenation with Oxygen Clathrate Hydrate," (Abstract 388), Abstracts From the 65 <sup>th</sup> Scientific Sessions, Circulation, Vol. 80, Suppl. I, pg. I-97, 1992.
		Brian A. Cason, et al., "Effects of High Arterial Oxygen Tension on Function, Blood Flow Distribution, and Metabolism in Ischemic Myocardium," Circulation, Vol. 85, No. 2, pgs. 828-838, February 1992.



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		Brian A. Cason et al., "Therapeutic Hyperoxia Diminishes Myocardial Stunning," J Card Surg, pgs. 459-464, 1994.
		J. Richard Spears et al., "Myocardial Protection With a Perfusion Guidewire During Balloon Angioplasty in a Canine Model," (Abstracts/Poster 1032-30), JACC, Vol. 27, Suppl. A, pg. 392A, February 1996.
		J. Richard Spears, "Advances in the Management of Respiratory Failure - Aqueous Preparations of Oxygen," American Society for Artificial Internal Organs, Inc., Vol. 42, No. 3, May-June, 1996.
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		Richard Maas et al., "Superoxygenation Process Treats Highly Concentrated Wastewaters," WATER/Engineering & Management, pgs. 29-33, 39, February 1997.
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		Adrian H. Shandling et al., "Hyperbaric oxygen and thrombolysis in myocardial infarction: The "HOT MI" Pilot Study," American Heart Journal, Vol. 134, No. 3, pgs. 544-550, September 1997.
		J. Richard Spears et al. "Aqueous Oxygen: A Highly O <sub>2</sub> -Supersaturated Infusate for Hyperoxemic Treatment of Postischemic Myocardium, (Abstract/Poster TCT-262), The American Journal of Cardiology, September 1997.
		J. Richard Spears et al., "Aqueous Oxygen - A Highly O <sub>2</sub> -Supersaturated Infusate for Regional Correction of Hypoxemia and Production of Hyperoxemia," Circulation, Vol. 96, No. 12, pgs. 4385-4391, December 16, 1997.
		G.J. Brereton et al., "Nucleation in small capillary tubes," Chemical Physics 230, pgs. 253-265, 1998.
		J.R. Spears et al., "Hyperoxemic Reperfusion With Aqueous Oxygen Improves Left Ventricular Function and Microvascular Flow in the Postischemic Canine Myocardium," (Abstract 1185-127), JACC, Vol. 31 (Suppl. A) pg. 449A, February 1998.
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		J. Richard Spears et al., "Subselective Intracoronary Aqueous Oxygen Hyperoxemic Reperfusion After One Hour Coronary Occlusion in Swine Restores Left Ventricular Function," (Abstracts/Poster 1124-165), JACC, Vol. 33, Suppl. A, pg. 357A, February 1999.
		Product Monograph, Fluosol® 20% Intravascular Perfluorochemical Emulsion, "Delivers Oxygen to Protect the Heart During PTCA," Alpha Therapeutic Corporation, pgs. 3-30.
		E. Newton Harvey et al., "Bubble Formation In Animals," J. Cell. Comp. Physiol., Vol. 24, pgs. 23-34.
<b>EXAMINER</b>		<b>DATE CONSIDERED</b>
<p>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>		

*Information Disclosure Statement--PTO-1449 (Modified)*